

NIMHD'S EFFORTS TO ADDRESS HEALTH DISPARITIES

15TH BIOMEDICAL RESEARCH SYMPOSIUM
TUSKEGEE UNIVERSITY
COLLEGE OF VETERINARY MEDICINE, NURSING AND
ALLIED HEALTH
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National Institutes of Health (NIH)



OUTLINE OF PRESENTATION

- NIMHD and its mission
- Defining health disparities
- Factors contributing to health disparities
- NIMHD perspectives on health disparities research
- Selected NIMHD extramural programs that support health disparities research

NIMHD HISTORY

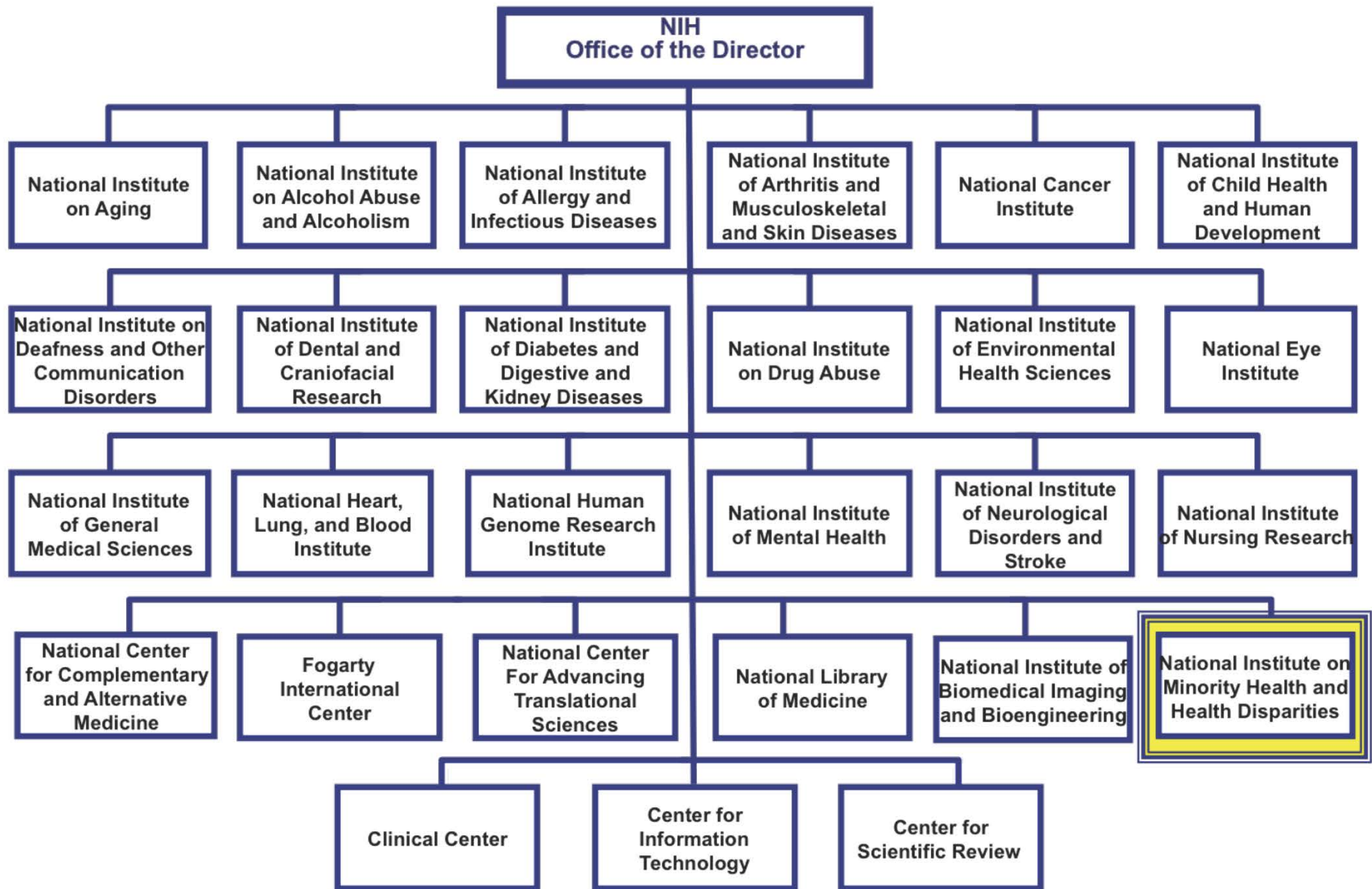
**CREATION OF ORMH
THE NIH REVITALIZATION ACT OF 1993
(PUBLIC LAW 103-43)**

**CREATION OF NCMHD
THE MINORITY HEALTH AND HEALTH DISPARITIES
RESEARCH AND EDUCATION ACT OF 2000
(PUBLIC LAW 106-525)**

**CREATION OF NIMHD
THE PATIENT PROTECTION AND AFFORDABLE CARE
ACT OF 2010
(PUBLIC LAW 111-148)**

NIMHD HISTORY (CONTINUED)

- NIMHD created with the Affordable Care Act, in 2010
- Mission: serves as the primary Federal agency for leading, coordinating and facilitating research to improve minority health and eliminate health disparities
- Institute received funding authority (approximately \$268M in fiscal year 2014)
- New intramural program established in 2011
- Recent approach to define health disparities research



NIMHD VISION STATEMENT

The NIMHD “envision[s] an America in which all populations will have an equal opportunity to live long, healthy, and productive lives”.



NIMHD MISSION

NIMHD conducts and supports research, training of a diverse workforce, research capacity and infrastructure development, public education and information dissemination programs. NIMHD is the leading entity at the NIH for planning, reviewing, coordinating, and evaluating minority health and health disparities research activities conducted by the NIH Institutes and Centers.

HEALTH DISPARITIES

NIMHD is seeking to establish a health disparities research definition.



**Let's start with this:
What are health
disparities?**

HEALTH DISPARITIES DEFINITIONS

- “A **population is a health disparity population** if there is a significant disparity in the overall rate of disease incidence, prevalence, morbidity, mortality or survival rates in the population as compared to the health status of the general population.” **Minority Health and Health Disparities Research and Education Act United States Public Law 106-525 (2000), p. 2498**
- “**Health inequities** are avoidable inequalities in health between groups of people within countries and between countries. These inequities arise from inequalities within and between societies. Social and economic conditions and their effects on people’s lives determine their risk of illness and the actions taken to prevent them becoming ill or treat illness when it occurs.” ***World Health Organization***

HEALTH DISPARITIES DEFINITIONS

- **Health disparities** are differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific **population groups** in the United States. *NIH*
- **Health disparities** as differences in the overall rate of disease incidence, prevalence, morbidity, mortality or survival rates. Many different **populations** are affected by disparities including racial and ethnic minorities, residents of rural areas, women, children, elderly and persons with disabilities. *OMH*

U.S. HEALTHY PEOPLE 2020

- **U.S. Department of Health and Human Services**
- **Healthy People 2020:** A health disparity is a “particular type of health difference that is closely **linked with social, economic, and/or environmental disadvantage.**
- Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their **racial or ethnic group; religion; socioeconomic status; gender; age; mental status; cognitive, sensory or physical disability; sexual orientation or gender identity; geographic location or other characteristics historically linked to discrimination or exclusion.**

Healthy People 2020

Overarching Goals

1. Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death;
- 2. Achieve health equity, eliminate disparities, and improve the health of all groups;**
3. Create social and physical environments that promote good health for all; and
4. Promote quality of life, healthy development, and healthy behaviors across all life stages.

CONSIDERED HD POPULATIONS

- **OMB standards – Racial/Ethnic Classification – Minority health focus**
 - African American or Black
 - Asian
 - American Indian or Alaska Native
 - Native Hawaiian or Other Pacific Islander
 - Hispanic or Latino
- **Other potential populations**
 - Rural, Urban, Poor, and Medically Underserved
 - Child and Adolescent Health
 - Aging
 - Immigrant and Migrant
 - Individuals with Disabilities
 - LGBTI

HEALTH DISPARITIES TERMINOLOGY

Health

- Disparities
- Variations
- Inequalities
- Inequity



Axis

- Age
- Disability status
- Gender
- Socioeconomic Status
- Sexual Orientation
- Geography
- Race/Ethnicity
- Religion

HEALTH DISPARITIES TERMINOLOGY

- **Social disparities in health**– disparities in health that are patterned by socioeconomic status (includes race)
- **Racial and/or ethnic disparities in health** – Divergence in health outcomes that are patterned by race and ethnicity
- **Biological determinants and health disparities** – differential distribution of risk variants in certain populations that put them at unique susceptibility or protection

Minority Health vs Health Disparities

MINORITY HEALTH (MH)

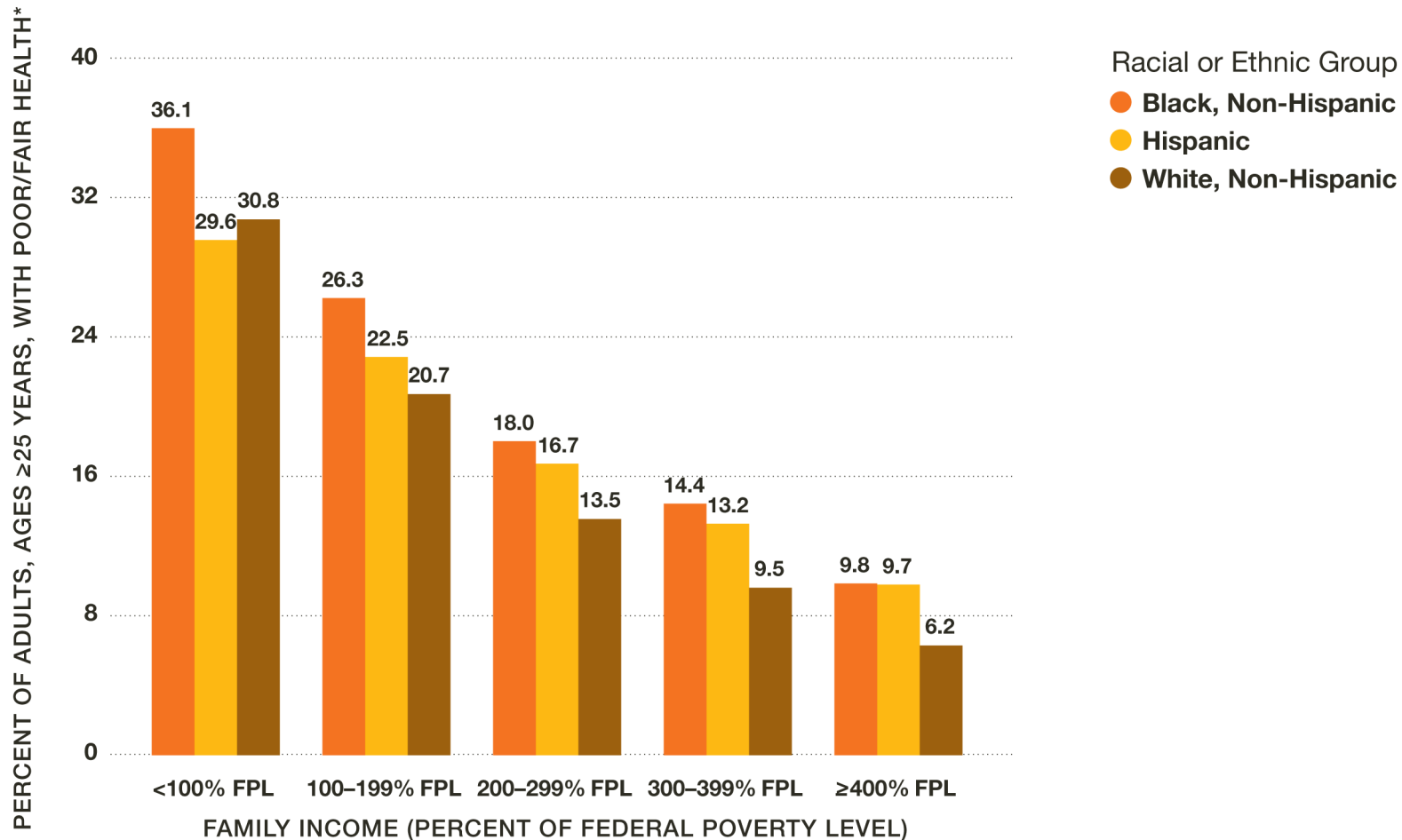
- Synonymous with HD, health equity, health equality, etc.
- Minorities are a subset of HD populations
- Research concentrated on-- DIFFERENCES:
 - Attributes of **population group**
 - Contributing factors to health status

HEALTH DISPARITIES (HD)

- Lacks standard definition
Needs defining parameters-thresholds
- More than minority populations
- Lacks consensus on Metrics / Benchmarks
- Research concentrated on determining when and how differences become health burdens, creates & tests interventions

Racial or Ethnic Differences in Health Regardless of Income

Racial or ethnic disparities do not simply reflect differences in income. Racial or ethnic disparities in the likelihood of poor or fair health are seen within each income group. Both income and racial or ethnic group matter.



Prepared for the Robert Wood Johnson Foundation by the Center on Social Disparities in Health at the University of California, San Francisco.

Source: National Health Interview Survey, 2001–2005.

*Age-adjusted

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www.commissiononhealth.org

SOCIAL DETERMINANTS OF HEALTH

- The social determinants of health are the circumstances in which people are **born, grow up, live, work, and age**, as well as the **systems put in place to deal with illness**. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics.
- The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries

QUANTIFYING THE HEALTH DISPARITIES

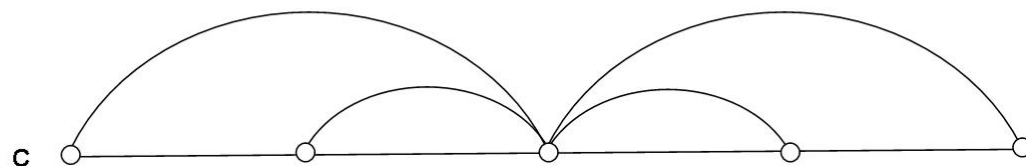
- **Size of population, changing demographics**

Population changes over time

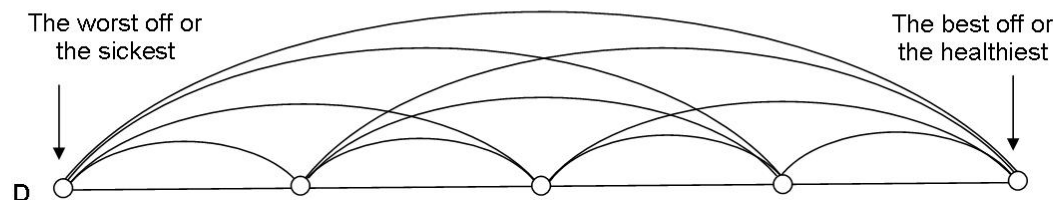
Does it matter whether we are measuring a health disparity at a single point in time, or over time?

- **Demographic changes**
- **Immigration changes**
- **Environmental changes**

MEASURING HEALTH DISPARITIES



Everyone compared with the mean for example, the index of dissimilarity



The worst off or the sickest

The best off or the healthiest

Everyone compared with everyone for example, the Gini coefficient

The choice of the reference group will affect the size of the disparity

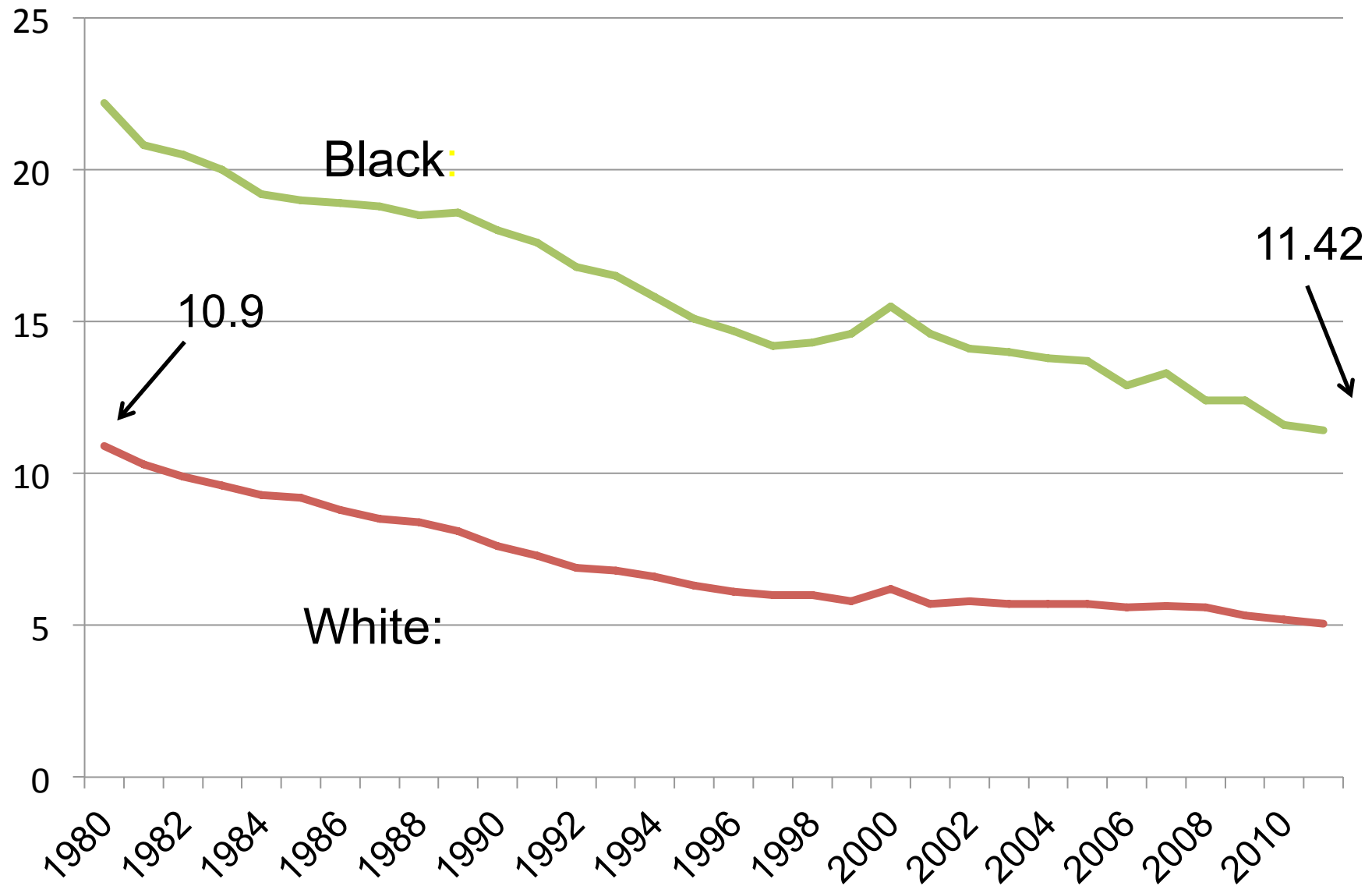
Reference Group or Comparison

A framework for measuring health inequity — Asada, Y 2005

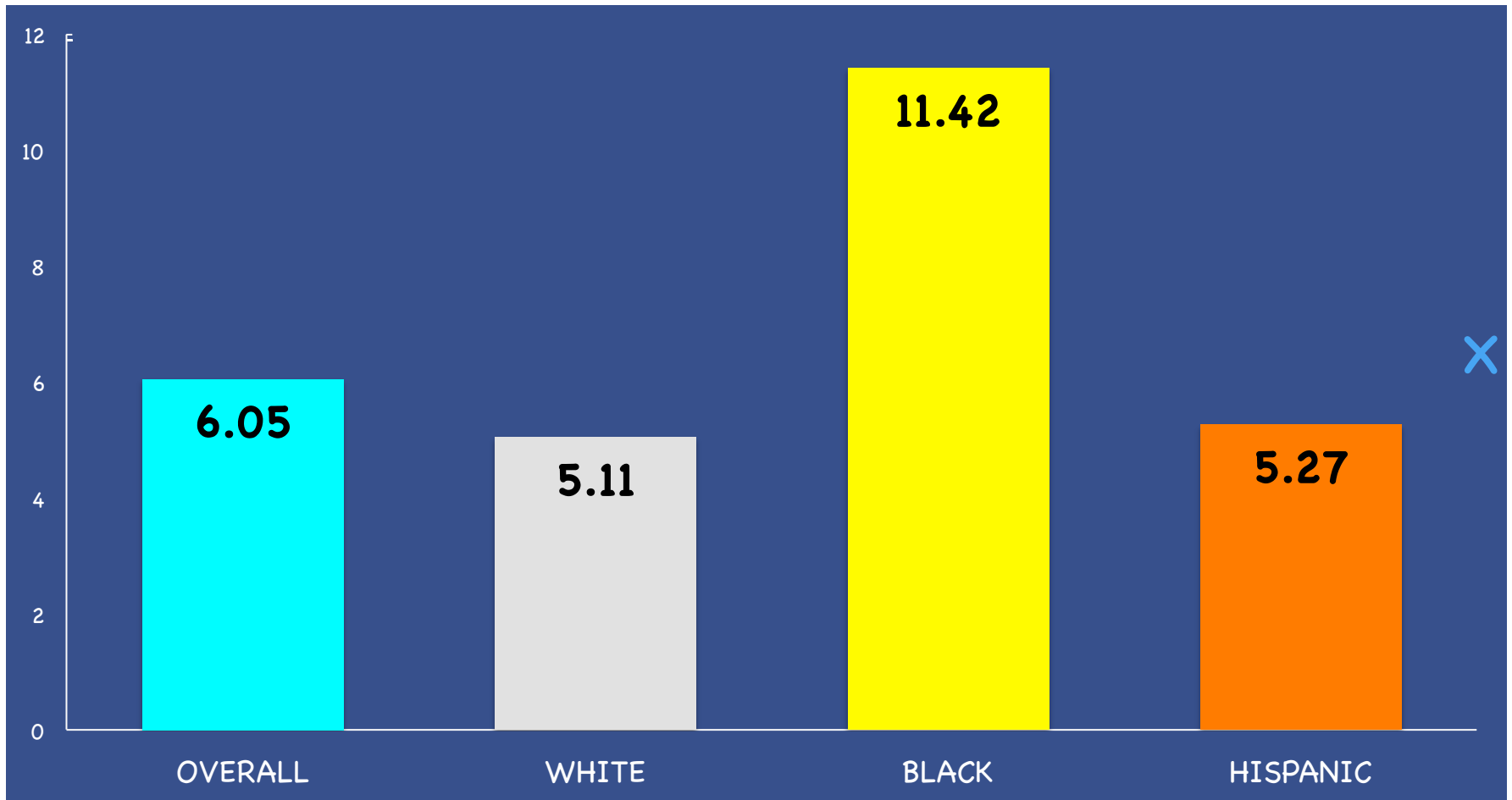
HHS LAUNCHED ITS INITIATIVE TO REDUCE HEALTH DISPARITIES IN SIX PRIORITY AREAS IN 2000

- Diabetes
- Immunizations
- HIV/AIDS
- Cardiovascular disease
- Cancer
- Infant Mortality

U.S. White & Black Infant Mortality Rates: 1980-2011 (per 1,000 live births)



U.S. Infant Mortality Rate: 2011



X : HP 2020 Goal

Infant Mortality

An iceberg floating in dark water under a cloudy sky. The visible tip of the iceberg is labeled with causes of infant mortality. The much larger submerged part of the iceberg is also labeled, illustrating that the visible causes are only a fraction of the total problem.

Premature Births

Congenital Anomalies

SUID

Maternal Pregnancy Complications

Placental or Cord Anomalies

Infant Mortality and Health Disparities

Health Determinants

Racism

Biology

Neighborhoods

Hopelessness

Unemployment

Poverty

Genetics

Stress

Limited Access
to Care

Housing

"Medical baggage"

Incarceration rates

Smoking

Fatherless

households

Substance Use

Lower graduation rates

**Under-
Educated**

No Insurance

Family Support

Poor Working Conditions

Teen Births

Nutrition

WHAT IS HEALTH DISPARITIES RESEARCH?

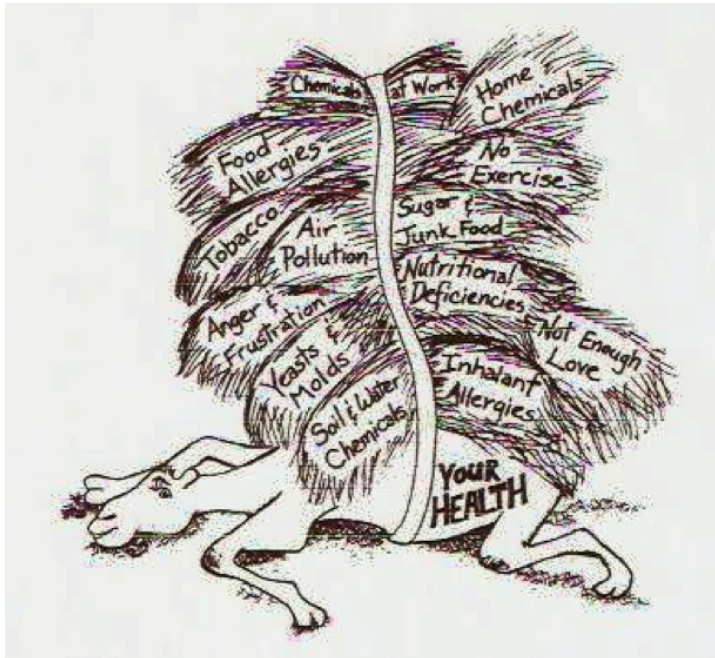
A broad multi-faceted field that includes **basic**, **applied**, **clinical**, **social** and **behavioral** research, as well as translational research addressing significant disparities in the health status, rate of disease incidence, prevalence, morbidity, mortality or survival rates – observed in a population or population subgroup

It includes the causes of such disparities and methods to identify, prevent, diagnose and treat such disparities, with the eventual goal to address causes and implement solutions.

BIOLOGICAL HEALTH AND STRESS

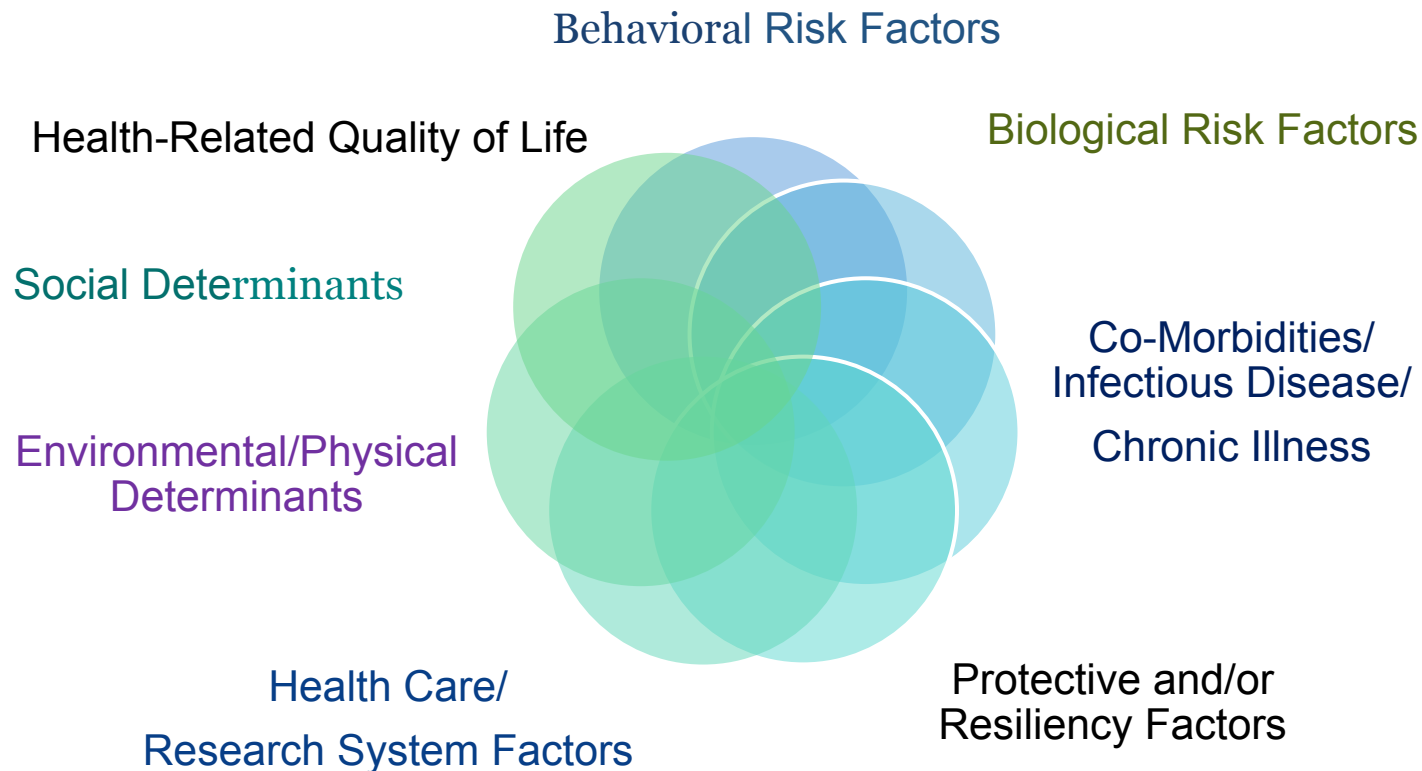
- Allostatic load is a multisystem construct theorized to quantify stress-induced biological risk.
- Differences in allostatic load may reflect differences in stress exposure and thus provide a mechanistic link to understanding health disparities.

VARIABLES USED IN THE ALLOSTATIC LOAD LITERATURE

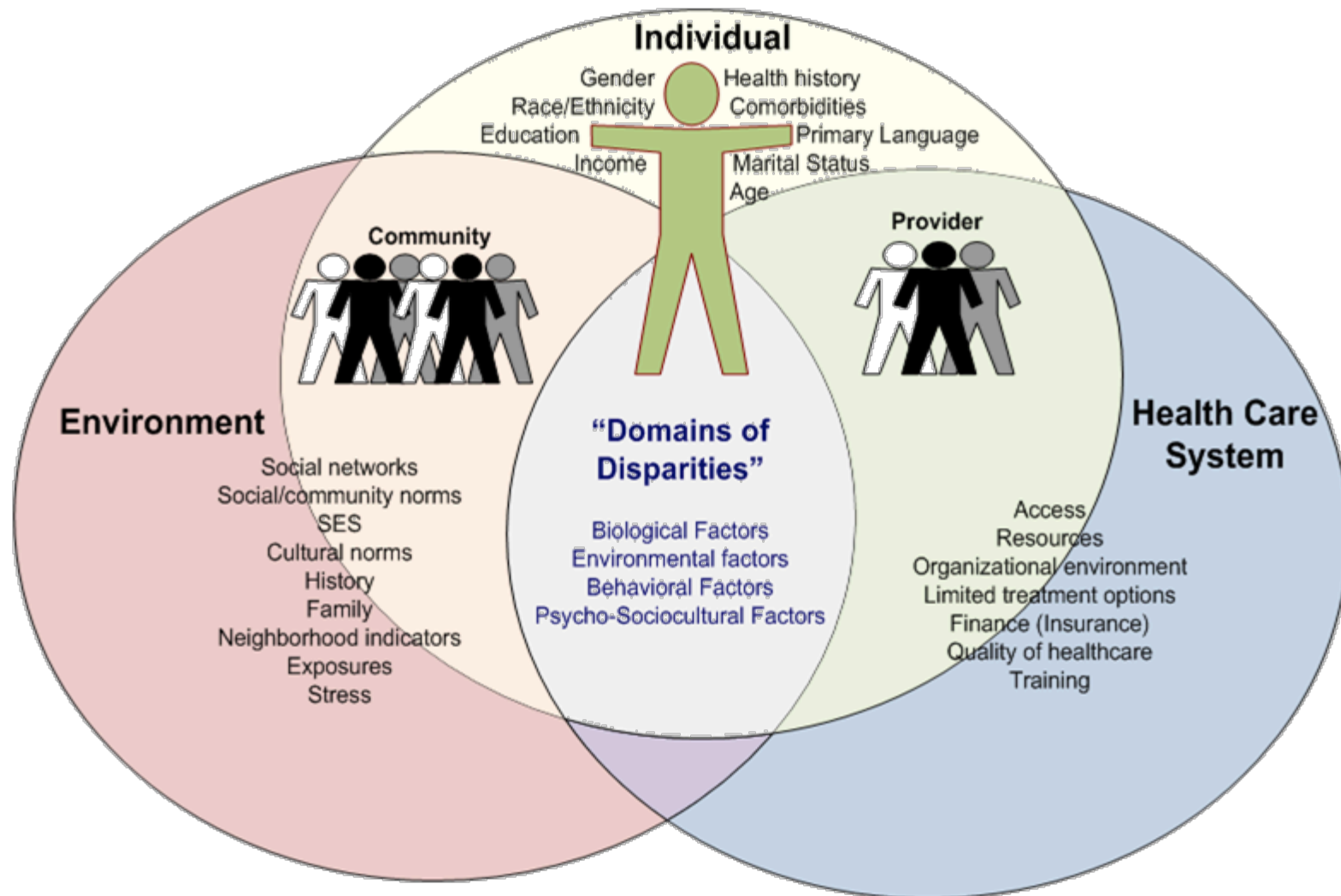


- **Commonly used variables:**
- **Physiologic stress response hormones;** e.g. cortisol, epinephrine and norepinephrine, dopamine, insulin-like growth factors, Dehydroepiandrosterone sulphate (DHEA-s)
- **Metabolic markers;** e.g. glycosylated hemoglobin (HbA1c), fasting and postprandial glucose, and waist hip ratio
- **Cardiovascular variables;** e.g. systolic and diastolic blood pressure, HDL and total cholesterol
- **Inflammation markers;** e.g. albumin, C-reactive protein, interleukin-6, tumor necrosis factor
- **Measures of organ function;** e.g. creatinine function, homocysteine

DOMAINS OF HEALTH DISPARITIES DETERMINANTS (CONTRIBUTING FACTORS)



COMPLEXITY & INTERACTIVE DOMAINS



ELEMENTS THAT ARE DESIRABLE IN CONDUCTING HEALTH DISPARITIES RESEARCH

A scientifically rigorous and transparent strategy for measuring health disparities

- Across multiple dimensions of the population
- Across multiple health indicators
- Across time

Appropriate Data Sources

Review of the relevant dimensions of health that is pertinent to the individual or community

- Social environment
- Intervening variables, e.g. life course trajectories

SUMMARY: HEALTH DISPARITIES RESEARCH

- Determines which combination/patterns of attributes and differences results in a health disparity condition (higher incidence, earlier onset, faster progression, poorer outcomes)
- Assesses known information in order to understand how to impact disparities - what, where, when, how, who
- Designs and tests interventions to reduce these disparities

SCIENCE OF HEALTH DISPARITIES

1. Target one or more of the following:
 - **Higher incidence/prevalence**
 - **Earlier onset**
 - **Faster progression**
 - **Poorer outcomes**
2. Examine health determinants interactions to verify contributing factors
3. Use results to determine the best intervention, applied at optimum time points
4. Test intervention to impact health disparity
5. Validate intervention – generalizability studies
6. Assess impact on health disparity–Measure variables and determine if this process reduced the disparity
7. Disseminate findings into practice and communities

HEALTH DISPARITIES RESEARCH MODEL

1

- Identify differences among populations (MH)

2

- Validate if, how & when these differences lead to health disparities (HD)

3

- Design interventions to reduce health disparities (HD)

FRAMEWORK
FOR
IDENTIFYING,
UNDERSTANDING
AND
REDUCING
HEALTH
DISPARITIES

NIMHD Extramural Program 1.

- I. Trans-disciplinary and Translational Research
- II. Basic, Social and Behavioral Research
- III. Science Education and Research Training
- IV. Research Capacity Building & Infrastructure

NIMHD EXTRAMURAL PROGRAM 2.

Trans-disciplinary and Translational Research:

- Centers of Excellence (COE)
- Transdisciplinary Collaborative Centers for Health Disparities Research (U54)

NIMHD Extramural Program 3.

Basic, Social and Behavioral Research

- Community-Based Participatory Research (CBPR)
- Basic and Applied Biomedical Research on Minority Health and Health Disparities (R01)
- Social, Behavioral, Health Services, and Policy Research on Minority Health and Health Disparities (R01)
- Small Business Innovation Research (SBIR)
- Small Business Technology Transfer (STTR)

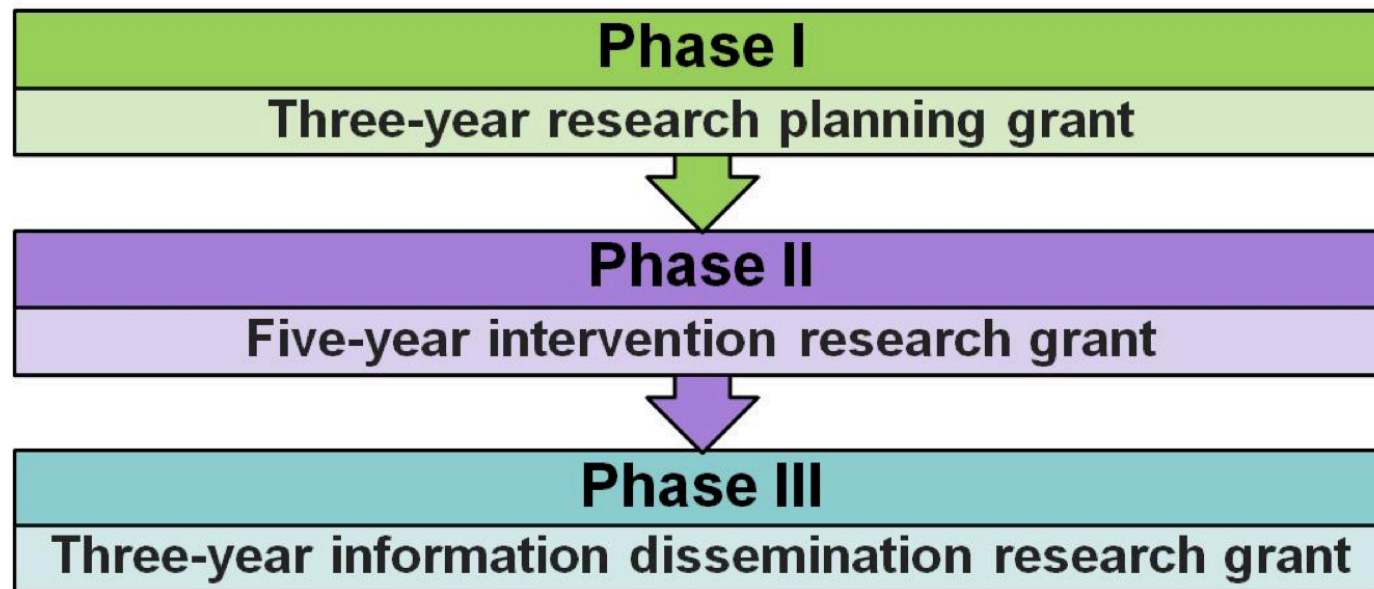
NIMHD Extramural Program 3.

Basic, Social and Behavioral Research

- Community-Based Participatory Research (CBPR)
- Basic and Applied Biomedical Research on Minority Health and Health Disparities (R01)
- Social, Behavioral, Health Services, and Policy Research on Minority Health and Health Disparities (R01)
- Small Business Innovation Research (SBIR)
- Small Business Technology Transfer (STTR)

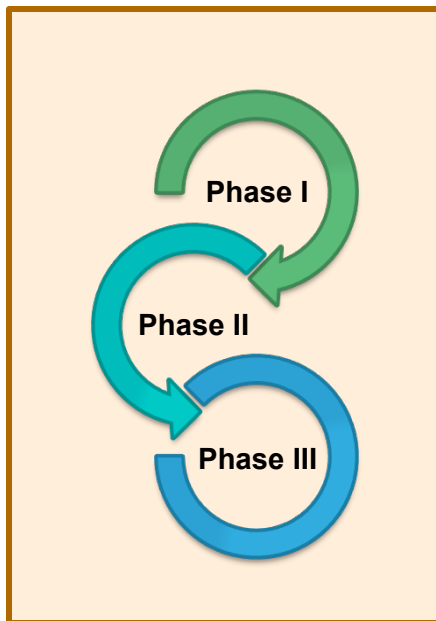
NIMHD Community-Based Participatory Research (CBPR) Program

Supports community intervention research studies using CBPR principles and methods to reduce and eliminate health disparities in any disease or condition of major concern to the community. CBPR - a tool for HD research.



NIMHD SBIR/STTR PROGRAM

■ Objectives of Three SBIR/STTR Phases:



- **Phase I:** Establish the technical/scientific merit and feasibility of the proposed research.
- **Phase II:** Continue research or development efforts initiated in Phase I.
- **Phase III:** Bring innovative technologies to the commercial market.

NIMHD EXTRAMURAL PROGRAM 4.

Science Education and Research Training

- Loan Repayment Program (LRP)
- Minority Health and Health Disparities International Research Training (MHIRT)
- Science Education Initiative
- Scientific Conference Grants

NIMHD EXTRAMURAL PROGRAM 5.

Research Capacity Building & Infrastructure

- Research Endowment Program
- NIMHD Resource-Related Minority Health and Health Disparities Research (U24)
- NIMHD Research Centers in Minority Institutions (RCMI) Program

SUMMARY

- Consistent definitions & delineations
- Population attributes of & contributing factors related to health
- HD research model & parameters
- Patterns for intervention points
- Systems approach-multiple contributing factors
- Standardize HD metrics and measures
- Predictive models and algorithms
- Community involvement when possible
- Translating findings to practice
- Centralized resources
- Diversity representation in accessing HD
- Recruiting and retaining diverse populations in clinical research trials
- Scientific workforce capacity, capitalizing on diversity

STRATEGIES

**TO DEFINE
HEALTH
DISPARITIES AS
A SCIENCE AND
TO PROVIDE
THE TOOLS AND
MECHANISMS
TO REDUCE
HEALTH
DISPARITIES
AND IMPROVE
HEALTH**



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DISCUSSION...

Comments, questions?